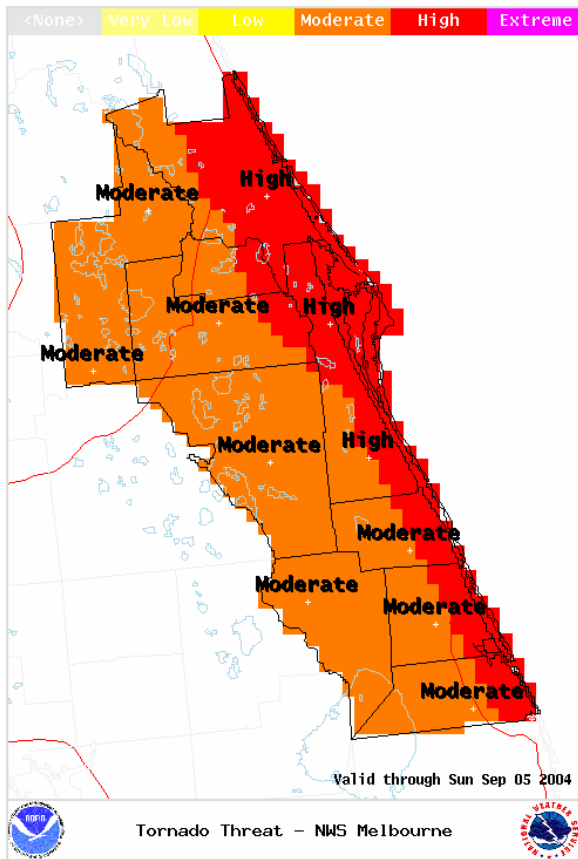




Experimental

Tropical Cyclone Tornado Threat Product



Description: Issued by the local Weather Forecast Office (WFO) during tropical cyclone situations, the *Tropical Cyclone Tornado Threat* product responsibly depicts the impending threat of the associated tornado hazard. It conveys the maximum level of threat projected for the event using a color-coded index scale ranging from 0 to 5, *Non-Threatening* to *Extreme*. It combines the forecasting expertise of the Storm Prediction Center and the local WFO by considering both the regional-scale environmental conditions and local-scale enhancements conducive for tornadoes. The threat levels are based on the likelihood that tornadoes will occur, combined with the anticipated strength (e.g., Fujita F-Scale) of the most intense tornadoes, offering a more complete expression of the overall threat. Although product release is triggered by the issuance of a tropical cyclone Watch or Warning anywhere within the defined area, the threat of tornadoes can be much broader in both time and space. Routine updates are provided shortly after each official advisory and are continued until tropical cyclone tornadoes are no longer an immediate threat to local communities.

Utility: The *Tropical Cyclone Tornado Threat* product uses an index scheme to distill the abundance of tornado threat assessment information into a single plan-view map that is easy-to-understand. For visual simplicity, warm colors (yellow and orange) are used for lower threat levels with hotter colors (red and purple) reserved for higher threat levels. A description of each threat level is readily available and highlights the minimum corresponding actions and relates them to potential impacts. By a large majority, F0 and F1 tornadoes occur more often than F2 to F5 tornadoes. Importantly, in tropical cyclone situations tornadoes can occur well before landfall (making preparedness and coastal evacuation efforts more difficult), well after landfall (making rescue and recovery efforts more hazardous), and in locations well away from the tropical cyclone center (making it more challenging to elevate public concern).

For Example: Upon the issuance of a tropical cyclone Watch or Warning, a mobile home resident located near but outside of the main wind and surge threat areas might investigate the *Tropical Cyclone Tornado Threat* product to assess the potential for impending tornado watches and warnings. Finding themselves subject to a high tornado threat, they may make the personal decision to temporarily evacuate to the nearby house of family or friends until the threat passes. Comparatively, utility restoration crews would have a better idea of the extent for potential outages away from the center of the storm. This information could then be factored into their preparedness and recovery operations strategy as limited manpower and resources are distributed.

Note: The example image depicts the tornado threat associated with Hurricane Frances (2004) as expressed within 24 hours of landfall in east central Florida. Threat level depictions are based on the anticipated strength of possible tornadoes, while accounting for the likelihood of tornado occurrence.



Hazard – Tropical Cyclone Tornadoes



Threat Index Level	Description
Extreme	<ul style="list-style-type: none">• Threat: An extreme threat to life and property.• Minimum Action: Preparations should be made for a very high likelihood (or a 45% probability or greater) of tornadoes; many tornadoes (even families) possible with scattered tornadoes of F2 to F5 intensity also possible.• Potential Impact: The potential for scattered locations to experience major tornado damage (see below), among many locations of minor to moderate tornado damage. Some tornadoes may have longer damage tracks
High	<ul style="list-style-type: none">• Threat: A high threat to life and property.• Minimum Action: Preparations should be made for a high likelihood (or a 30 to 44% probability) of tornadoes; scattered tornadoes possible with isolated tornadoes of F2 to F5 intensity also possible.• Potential Impact: The potential for isolated locations to experience major tornado damage (see below), among scattered locations of minor to moderate tornado damage. Some tornadoes may have longer damage tracks.
Moderate	<ul style="list-style-type: none">• Threat: A moderate threat to life and property.• Minimum Action: Preparations should be made for a moderate likelihood (or a 15 to 29% probability) of tornadoes; many tornadoes (even families) of F0 to F1 intensity possible.• Potential Impact: The potential for many locations to experience minor to moderate tornado damage (see below). Some tornadoes may have longer damage tracks.
Low	<ul style="list-style-type: none">• Threat: A low threat to life and property.• Minimum Action: Preparations should be made for a low likelihood (or a 5 to 14% probability) of tornadoes; scattered tornadoes of F0 to F1 intensity possible.• Potential Impact: The potential for scattered locations to experience minor to moderate tornado damage (see below).
Very Low	<ul style="list-style-type: none">• Threat: A very low threat to life and property.• Minimum Action: Preparations should be made for a very low likelihood (or a 2 to 4% probability) of tornadoes; isolated tornadoes of F0 to F1 intensity possible.• Potential Impact: The potential for isolated locations to experience minor to moderate tornado damage (see below).
Non-Threatening	<ul style="list-style-type: none">• Threat: No discernible threat to life and property.• Minimum Action: Listen for forecast changes; review tornado safety rules.• Potential Impact: None expected; strong wind gusts may still occur.

Note: In all tropical cyclone situations, listen for possible tornado watches; take cover immediately if a tornado warning is issued for your area.

F0 Tornado Damage - Minor tornado damage. Damage to chimneys, porches, screen houses, and lighter-weight outbuildings; a few downed trees and power lines; large signs blown over. Tornado wind speeds of 73 mph or less.

F1 Tornado Damage - Moderate tornado damage. Mobile homes moved off foundations or overturned; roof surfaces peeled off buildings; cars blown off roads; several large trees downed and some power outages. Tornado wind speeds of 74 mph to 112 mph.

F2 to F5 Tornado Damage - Major tornado damage (up to complete destruction). Mobile homes completely demolished; numerous large trees snapped off, totally uprooted, or debarked; small debris objects (lawn mowers, smaller sections of roofs) become airborne missiles. Significant power outages over larger areas. Structural damage to sturdy buildings, especially roof and wall failures. In the worst situations, well-constructed walls fail or are even removed; large debris objects (cars, larger sections of roofs) become airborne missiles causing further structural failures. Tornado wind speeds 113 mph or greater; in the worst situations, 260 mph or greater.